CHAPTER 1

Purpose of and Need for Action

Background

Stormwater carries pollution to Portland's streams and the Willamette River, an American Heritage River, causing water quality and watershed health problems. All but one of Portland's streams have state-listed impaired water quality.

Stormwater runoff is the rain that flows off roofs, sidewalks, yards, parking lots, and streets. Stormwater runoff carries pollutants it picks up from yards or the street, including excess fertilizers and pesticides, toxic chemicals from automobiles, and bacteria from animal wastes. Following the Clean Water Act amendments of 1987, the U.S. Environmental Protection Agency (EPA) issued regulations to control urban stormwater pollution. The regulations require the City of Portland, as a Phase I community, to have a National Pollutant Discharge Elimination System (NPDES) Stormwater Discharge Permit for its storm sewer discharges and also a comprehensive stormwater management program. Many activities are taking place to reduce pollutant loads that are discharged from stormwater.

In Portland, stormwater runoff is conveyed via ditches, separated storm sewers, and combined sewers to one of three disposal locations: the ground, water treatment plants, or local waterways. While some stormwater soaks into the ground, most goes into a stormwater inlet or catch basin, the familiar grated openings in the street. In neighborhoods where ditches and dedicated storm sewers carry stormwater, the runoff flows to the nearest water body—usually a small stream that leads to the Willamette River.

Portland's combined sewer system serves businesses, institutions, and about 523,000 residents. In combined sewer areas, stormwater mixes with sewage in pipelines during significant storm events. The combined sewage is a mixture of about 80 percent stormwater runoff and 20 percent untreated sanitary wastes. Combined sewer overflows (CSOs) result when pipelines do not have enough capacity to carry all of the combined sewage and stormwater during storm events. Rain causes overflows on more than 100 days each year, about one-third of which occur during the summer, when water is most likely to be used by boaters and other recreationists.

The City of Portland's CSO problem is severe. In 1994, EPA issued the CSO Control Policy, which stated that municipalities such as Portland are responsible for developing and implementing CSO Long Term Control Plans (LTCP) that will ultimately result in compliance with the requirements of the federal Clean Water Act. Primary objectives of Portland's LTCP are to meet applicable water quality standards in support of designated uses of water, and to reduce risks to human health and the environment by eliminating, relocating, or controlling CSOs to the affected waters.

BES is working to get as much stormwater runoff as possible out of the combined sewers. Portland first took steps toward reducing combined sewer overflows in the 1970s. Since

then, Portland has eliminated 72 percent of the overflow volume, and CSOs in the Columbia Slough were virtually eliminated by 2000. By the year 2011, Portland is required to eliminate 94 percent of the overflows to the Willamette River.

The city's Bureau of Environmental Services (BES) is taking steps to bring area streams into compliance with water quality standards. BES's citywide management program focuses on reducing the impacts of pollution and stormwater runoff quantity. The Portland *Stormwater Management Manual 2.0* (BES, 2002) forms the technical foundation of the program and presents design standards for pollution control devices as well as best management practices (BMPs) designed to improve stormwater quality.

Need for Action

Underlying the City of Portland's Innovative Wet Weather Program (IWWP) is the need for prompt and proven actions that improve water quality and watershed health in Portland by reducing CSOs, stormwater runoff peaks and volumes, and associated pollutant concentrations and by monitoring the effectiveness of green solutions as alternatives to expensive wastewater transport and treatment.

Purpose of Action

The Innovative Wet Weather Program grants have the following purposes:

- Capture and detain stormwater runoff as close to the source as possible
- Reduce the volume of stormwater entering the combined sewer system
- Filter stormwater to remove pollutants before the runoff enters groundwater, streams, or wetlands
- Use and promote methods that provide multiple environmental benefits
- Mimic natural (predevelopment) hydrologic conditions
- Make all materials and pertinent information available to educate others
- Use techniques that are less costly than traditional piped solutions
- Protect human health and safety

Proposed Action

EPA is conditionally funding portions of the City of Portland's Innovative Wet Weather Program. The City of Portland proposes to use the EPA grants to implement innovative approaches to manage stormwater runoff and will be providing matching funds. Two EPA grants for specified types of projects have already been awarded, and additional federal grants for similar project types are expected. BES has lead responsibility for implementing IWWP projects. The IWWP grant projects funded from these first two EPA grants will be implemented over the period from 2003 through at least 2005, but some implementation may extend beyond this timeframe. The implementation timeframe for IWWP projects

funded by additional federal grants will be determined at the time of award. The grant projects will complement ongoing CSO reduction and wet weather actions by the City of Portland and other government, business, community, and environmental groups in the Portland area.

The IWWP consists of individual projects at locations throughout the city that are designed to improve the water quality and the natural environments of Portland. The majority of the IWWP projects will be conducted in the combined sewer area of the city. The proposed projects will reduce the volume of stormwater entering the combined sewer system and will remove stormwater pollutants.

Proposed projects are in five main categories: (1) Water Quality-Friendly Streets and Parking Lots, (2) Downspout Disconnections, (3) Eco-Roofs, (4) Monitoring and Feasibility Studies, and (5) Educational Efforts. Only the first three are categories of construction projects. Also included is a sixth funding category, Grant and Project Management, which provides for program and project management. The IWWP selected the Tanner Creek Stream Diversion Project (Phase III) as its EPA match project. City of Portland Capital Improvement Project matching funds will amount to \$1.35 million for these first two EPA grants. Additional matching funds will be identified when future grants are awarded. The Tanner Creek Stream Diversion Project (Phase III), which will cost much more than the match amount and include many features for improving water quality and quantity, previously was evaluated in an EPA environmental assessment entitled, Tanner Creek Basin Environmental Assessment (City of Portland May, 1997). The environmental effects of the city's match project were determined to be not significant. Because EPA grant funds will not be spent on this match project, potential environmental effects of the match are not considered further in this document. The funding categories are described in detail in Chapter 2 of this environmental assessment.

The project elements are based on innovative technologies described in the Portland *Stormwater Management Manual 2.0*, the purpose of which is to provide stormwater management principles and techniques that help preserve or mimic the natural hydrologic cycle and achieve water quality goals for stormwater runoff quantity and pollution (City of Portland 2002). The *Stormwater Management Manual* provides design criteria for relatively simple approaches to selecting and designing facilities that provide multiple stormwater management benefits. City Code Chapter 17.38 includes the section of City Code that addresses stormwater management policies and standards, and officially recognizes the city's *Stormwater Management Manual*.

The *Stormwater Management Manual* is more than a collection of stormwater design criteria. It outlines performance standards and incentives for innovative approaches to stormwater management. For example, the manual, in concert with the Portland City Code, requires that significant new developments and redevelopments must:

- Remove 70 percent of total suspended solids (TSS) from runoff generated by a design storm up to and including 0.83 inches of rainfall over a 24-hour period
- Use surface retention facilities "to the maximum extent practicable"
- Provide on-site infiltration "to the maximum extent practicable"
- Ensure that on-site flow control is sufficient to maintain peak flows at their predevelopment levels for the 2-year, 5-year, and 10-year runoff events

- Control stormwater volumes "to the maximum extent practicable"
- Ensure that runoff does not:
 - exceed the capacity of the receiving conveyance facility or water body
 - increase the potential for stream bank and stream channel erosion
 - add significant volume to an existing closed depression
 - create or increase any upstream or downstream flooding problems

The *Stormwater Management Manual* describes several incentives to encourage developers to implement innovative wet weather approaches. For example:

- Combine innovative wet weather approaches with city landscaping requirements (i.e., Portland City Code 33.258)
- Offset impervious surface area management requirements by incorporating innovative wet weather approaches into site design (i.e., Form SIM: Simplified Approach for Stormwater Management)
- Claim stormwater management credit for planting new trees and keeping existing tree canopy on-site

Details about the design linkages between the *Stormwater Management Manual* and the IWWP are given in Chapter 4, Table 4.1-1 of this environmental assessment.

This environmental assessment addresses only those projects that are funded, in whole or in part, by EPA's Innovative Wet Weather Program grant. The National Environmental Policy Act (NEPA) requires EPA to review the IWWP's potential environmental impacts through the use of federal funds. This environmental assessment will assist EPA in complying with the procedural requirements of NEPA and was prepared to assist EPA in determining whether a finding of no significant impact (FONSI) is warranted. The FONSI would be subject to a 30-day public review.